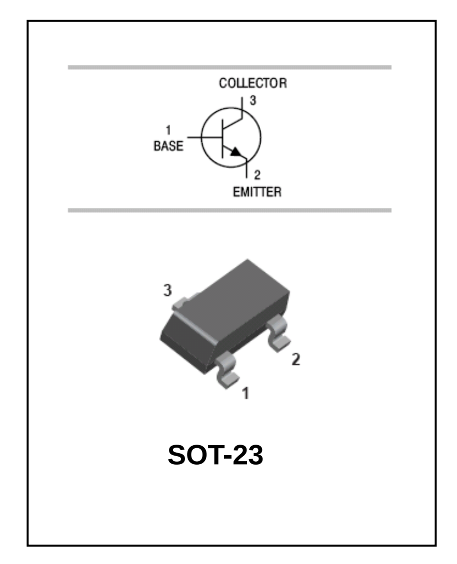
# Silicon Epitaxial Planar Transistor **S8050**

## FEATURES

Lead-free

- High Collector Current.($I_C$= 500mA).
- Complementary To S8550.
- Excellent $H_{FE}$ Linearity.
- High total power dissipation.($P_C$=300mW)




## APPLICATIONS

- High Collector Current.

## ORDERING INFORMATION

| Type No. | Marking | Package Code |
|---|---|---|
| S8050 | J3Y | SOT-23 |

## MAXIMUM RATING @ Ta=25℃ unless otherwise specified

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 40 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 25 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current -Continuous | 500 | mA |
| $P_C$ | Collector Dissipation | 300 | mW |
| $T_j,T_{stg}$ | Junction and Storage Temperature | -55~150 | ℃ |

# Silicon Epitaxial Planar Transistor **S8050**

## ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C$=100μA,$I_E$=0 | 40 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C$=0.1mA,$I_B$=0 | 25 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E$=100μA,$I_C$=0 | 5 | | | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=40V,$I_E$=0 | | | 0.1 | μA |
| Collector cut-off current | $I_{CEO}$ | $V_{CE}$=20V,$I_B$=0 | | | 0.1 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=5V,$I_C$=0 | | | 0.1 | μA |
| DC current gain | $h_{FE}$ | $V_{CE}$=1V,$I_C$=50mA<br>$V_{CE}$=1V,$I_C$=500mA | 120<br>50 | | 350 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=500mA, $I_B$= 50mA | | | 0.6 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C$=500mA, $I_B$= 50mA | | | 1.2 | V |
| Transition frequency | $f_T$ | $V_{CE}$=6V, $I_C$= 20mA<br>f=30MHz | 150 | | | MHz |

## CLASSIFICATION OF $h_{FE(1)}$

| **Rank** | **L** | **H** |
|---|---|---|
| **Range** | 120-200 | 200-350 |

## Silicon Epitaxial Planar Transistor **S8050**

## TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

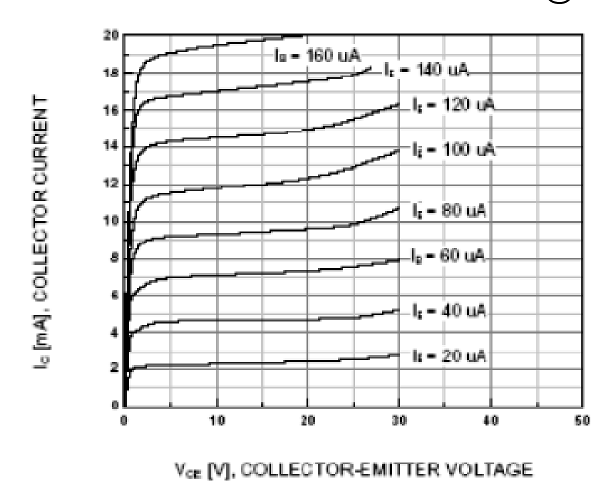



**Figure 1. Static Characteristic**

$V_{CE}$ = 1V

$h_{FE}$, DC CURRENT GAIN

$I_C$ [mA], COLLECTOR CURRENT

**Figure 2. DC current Gain**

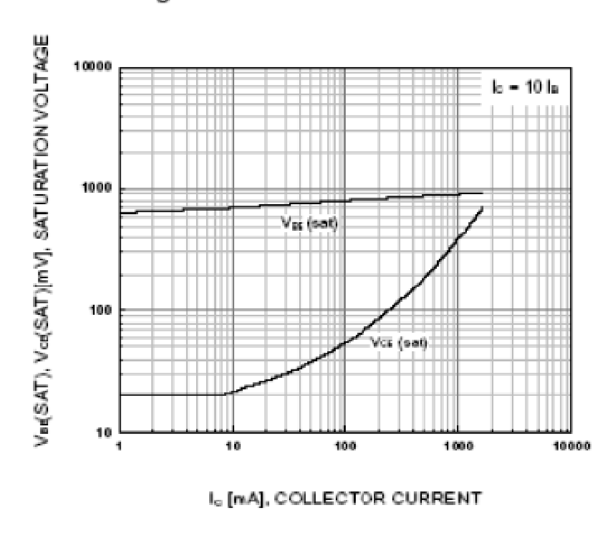



**Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage**

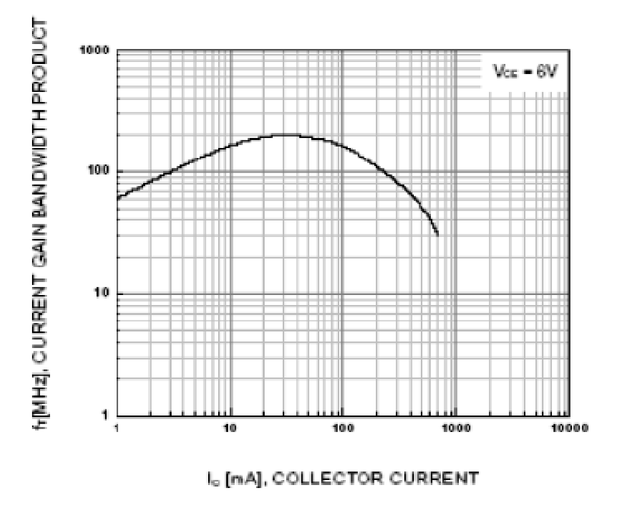
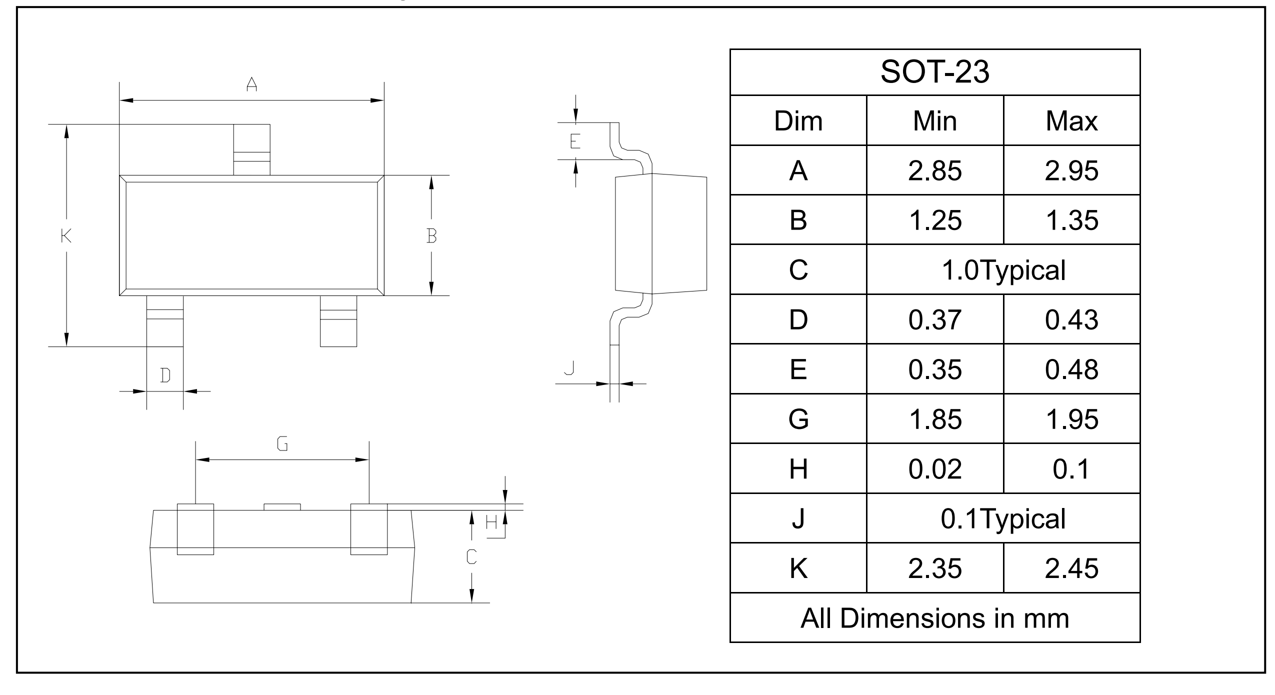



**Figure 4. Current Gain Bandwidth Product**

# Silicon Epitaxial Planar Transistor **S8050**

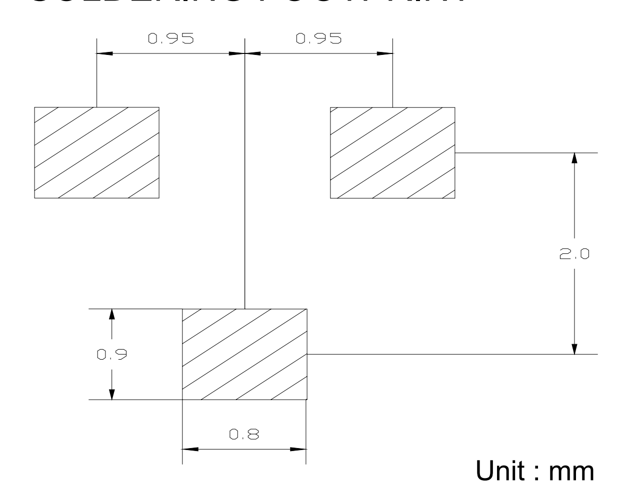
## PACKAGE OUTLINE

Plastic surface mounted package SOT-23




| SOT-23 | | |
|---|---|---|
| Dim | Min | Max |
| A | 2.85 | 2.95 |
| B | 1.25 | 1.35 |
| C | 1.0Typical | |
| D | 0.37 | 0.43 |
| E | 0.35 | 0.48 |
| G | 1.85 | 1.95 |
| H | 0.02 | 0.1 |
| J | 0.1Typical | |
| K | 2.35 | 2.45 |
| All Dimensions in mm | | |

## SOLDERING FOOTPRINT




Unit : mm

## PACKAGE INFORMATION

| Device | Package | Shipping |
|---|---|---|
| S8050 | SOT-23 | 3000/Tape&Reel |